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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,019	11/29/2000	John E. Thompson	10799/12	8962

26646 7590 04/30/2003

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NEW YORK, NY 10004

EXAMINER

BAUM, STUART F

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 04/30/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/725,019

Applicant(s)

THOMPSON ET AL.

Examiner

Stuart F. Baum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11,13-41,43-45,47-49,52-57,59-65,67 and 71-73 is/are pending in the application.
- 4a) Of the above claim(s) 1-11,18-23,30,31,43,44,47,54,57 and 59-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-17,24-29,32-41,45,48,49,52,53,55,56,67 and 71-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. The amendment filed 2/28/2003 has been entered.

Claims 1-11, 13-41, 43-45, 47-49, 52-57, 59-65, 67, and 71-73 are pending.

Claims 12, 42, 46, 50-51, 58, 66, and 68-70 have been canceled.

Claims 1-11, 18-23, 30-31, 43-44, 47, 54, 57, and 59-65 have been withdrawn from consideration for being drawn to non-elected inventions.

2. Claims 13-17, 24-29, 32-41, 45, 48-49, 52-53, 55-56, 67, and 71-73 are examined in the present office action.

This action is made FINAL.

3. The text of those sections of Title 35, U.S. Code not included in this office action can be found in a prior office action.

4. Rejections and objections not set forth below are withdrawn.

5. This application contains claims 1-11, 18-23, 30-31, 43-44, 47, 54, 57, and 59-65 drawn to an invention nonelected with traverse in Paper No. 9. A complete reply to the final rejection must include cancelation of nonelected claims (37 CFR 1.144) See MPEP § 821.01.

Claim Objections

6. The objection to claim 55 is maintained as the claim still depends on a non-elected claim.

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Indefiniteness

7. Claims 14-17, 28-29, 40, 45, 55-56, 67, and 72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 14, the metes and bounds of “high stringency conditions” is not defined. For those artisans skilled in the art, “high stringency conditions” are determined and set depending on the artisan and/or situation, and what one considers high stringency may be low/moderate stringency for another. Applicant has specified in the specification an example of a “typical” hybridization condition (page 27, lines 23-27) but has not explicitly stated how they define “high stringency”, and as such, Applicant should specify in the claims those conditions which define the specified hybridization conditions. All subsequent recitations of “high stringency conditions” are also rejected.

In claim 17, second line, the recitation “is” should be deleted.

In claim 40, second line, “[s and]” should be deleted.

In claim 40, the recitation “produces vegetables” should be deleted. Plants do not produce vegetables. The recitation “vegetable” is a grocery or layman term and does not make sense as stated. Plants produce leaves, roots, stems, flowers, fruits, etc and when you go to a restaurant or grocery store, some plants are considered as a vegetable.

In claim 55, given that Applicant did not traverse the rejection or amend the claim, the rejection is maintained for the reasons of record as set forth in the office action mailed 11/7/2002. Accordingly, this rejection is maintained.

Enablement

8. Claims 13-17, 24-29, 32-41, 45, 48-49, 52-53, 55-56, 67, and 71-73 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is maintained for the reasons of record set forth in the Official action mailed 11/7/2002. Applicant's arguments filed 2/28/2003 have been fully considered but they are not persuasive.

Applicants contend that they are not claiming all the proteins involved in the senescence process and a whole process does not have to be understood to claim a portion of the process. Applicants assert that the disclosure in the specification enables one skilled in the art to obtain antisense polynucleotides of senescence-induced eIF-5A and that one could practice the various claimed methods. Applicants contend that the specification teaches the relationship between DHS, senescence induced eIF-5A and senescence and that using DHS nucleotide sequence in an antisense orientation to reduce the expression of DHS results in plants and progeny with an increased biomass as well as delayed softening and spoilage of fruit (page 15, first paragraph). Applicants further contend that the specification teaches all the steps necessary to create an antisense construct, transform a plant and create plants with increased biomass and less blossom end rot.

The Examiner agrees that Applicant has taught a relationship between DHS and senescence-induced eIF-5A and that Applicant has taught how one skilled in the art could create antisense constructs and transform a plant. The Examiner also agrees that an applicant does not have to teach all the proteins involved in a process just to claim a particular protein. But, if an

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Applicant does not fully understand all the protein interactions involved in a process, then Applicant is required to explicitly teach by way of examples that a particular protein which Applicant wishes to claim, actually produces the claimed desired result. Applicants have taught that DHS activates eIF-5A, but they have not specified if eIF-5A is required for the normal senescence process, or if there are other molecules with redundant functions as those of eIF-5A that can substitute for eIF-5A. Even if eIF-5A is required, it is unknown if the absence of eIF-5A is sufficient to stop the senescence process. In claim 15, Applicant claims an antisense molecule about 6 nucleotides long, as well as an antisense molecule about 100 nucleotides long. Applicant has not shown that a molecule comprising 6 nucleotides has antisense function and acts predictably to suppress eIF-5A expression. Given that there are a multitude of proteins involved in the senescence process; given that Applicant has not taught the optimum size of an antisense molecule to be used to down-regulate eIF-5A, and given that it is unclear if down regulating eIF-5A will cause the senescence process to be ameliorated, it would require undue experimentation by one skilled in the art to make and/or use the claimed invention.

In addition, in regards to the present application, Applicant is claiming any antisense molecule that hybridizes under stringent conditions to SEQ ID NO:11. Applicant has not explicitly defined their stringent conditions but has given "a typical example" of stringent conditions as comprising 6X SSC (page 27, lines 23-27). These conditions will allow the hybridization of a multitude of sequences, most of which will not be the senescence induced eIF-5A polynucleotide. As stated in the previous office action, it would require undue experimentation by one skilled in the art to isolate and identify the correct sequence and then

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determine the optimum size of an antisense sequence that is necessary to inhibit expression of the endogenous senescence-induced eIF-5A polynucleotide.

Written Description

9. Claims 13-17, 24-29, 32-41, 45, 48-49, 52-53, 55-56, 67, and 71-73 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Given that Applicant has not traversed this rejection, this rejection is maintained for the reasons of record set forth in the Official action mailed 11/7/2002.

10. No claims are allowed.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

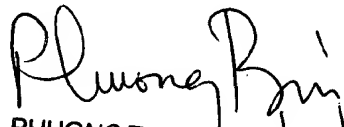
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart Baum whose telephone number is (703) 305-6997. The examiner can normally be reached on Monday-Friday 8:30AM – 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (703) 306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 or (703) 305-3014 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, who may be contacted at 308-0196.

Stuart F. Baum Ph.D.

April 22, 2003


PHUONG T. BUI
PRIMARY EXAMINER 4/23/03